

TIME OF DEATH: POSTPONED

PETER SAFAR REFUSES TO GIVE IN TO THE ARBITRARY
MISCHANCES OF NATURE | BY DAVID PETECHUK

Peter Safar wondered if his luck was running out.

After the Germans marched into the winding, storied streets of Vienna, it didn't take long for the Austrian teenager to understand his parents' vehement anti-Nazi sentiments. The Germans conscripted him into a labor camp and then the army, but the degradations Safar suffered and witnessed were mild compared to the fate of innumerable others.

Now it was four years later, the fall of 1942, and as the 18-year-old soldier stood before his captain, he was asked to make the decision of a lifetime.

"I assume you'll be applying for officer's school."

Safar knew that being sent to the front as an infantryman meant near-certain death. The Germans were taking a beating in Stalingrad. They needed cannon fodder. Safar looked hard into the captain's blue eyes. They were alone, and the captain was, like him, a young Austrian recruited into the German army—probably reluctantly. Safar sensed he could trust him.

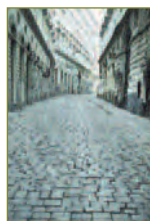
"I'll never become an officer for this regime."

No response. Safar stood stock still.

"Besides, how can I be an officer when I don't have my major Aryan certificate?" Safar's maternal grandfather was Jewish.

"That doesn't matter anymore. You must know that if you *don't* apply you will be outfitted immediately for the front. Without rank."

Safar understood completely. But fortune was on his side. His commander—consciously Safar believes—gave him and other infantrymen an opportunity to disappear during a three-day



Christmas furlough. With the help of his physician parents and other passive resisters throughout Vienna, Safar not only evaded the front for the next two years but also attended medical school. With a stamina that amazes colleagues and friends, Safar, who now holds the title Distinguished Service Professor, has kept a marathon pace ever since. It's no exaggeration to say that his contributions to emergency and critical care medicine have saved the lives of millions. Forty-seven years after that

tense conversation with his captain, Austria awarded Safar the greatest recognition it bestows on scientists: the Austrian Cross of Honor, for Science and Art, First Class.

"My privileged survival of World War II motivated me into a life of workaholism," says the 75-year-old Safar, who still maintains a nearly 80-hours-a-week schedule.

After all, snatching people from the clutches of death isn't easy.

PHOTOGRAPHY | MATT BULVONY



A Safar milestone—the first physician staffed intensive care unit in the United States, Baltimore City Hospital, 1958

The short list of Safar's accomplishments: initiating and developing three academic anesthesiology departments, the first intensive care unit in the United States, and a resuscitation research center; conceptualizing and lobbying for the creation of our modern emergency medical system; developing key techniques used in contemporary first aid and resuscitation; launching the first modern disaster resuscitation research studies; and authoring several textbooks and more than 1,200 published articles, papers, and abstracts.

With a rich Viennese accent and impeccable manners, Safar exudes cultured old-world charm. Self-assured, he smiles easily and often; his eyes evoke boyish mischievousness and enthusiasm. Yet there's a sense of urgency about him, a sharp edge that cuts to the chase.

"One of the reasons I chose medicine was something a friend of my father told me: 'Peter, medicine is the only profession in which you can avoid being forced to become a servant of the devil.'"

This "uncle's" advice alluded to the regime that had taken over Austria in 1938, but it seems Safar has taken it to heart at another level, waging a war against death itself. The once reluctant soldier has fought this enemy the only way he knows how. . . without relenting. In the process, he has been more than willing to buck the system, pursuing daring experiments and projects with fierce intensity. For example, in the late 1950s, as chief of anesthesiology at Baltimore City Hospital, Safar and some trusting human volunteers set out to prove his contentious theories about cardiopulmonary resuscitation.

"It was a dangerous situation if you weren't

paying attention," understates volunteer Felix Steichen, who later became a professor of surgery at Pitt and is now at New York Medical College. "Given too much curare [to paralyze muscles], you could wake up with brain damage. But we all had tremendous confidence in Peter. Still, I wouldn't have done it if I hadn't been excited by the project."

Sedated and temporarily paralyzed to mimic the non-breathing victim, Steichen and the others were put as close to death as ethically feasible. Then Safar went to work. Tilting the head back and thrusting the jaw forward, he opened the subject's air passage and proceeded to show how one human could breathe life into another. These experiments demonstrated how the upper airway obstructs in coma, how the obstruction can be relieved, and how mouth-to-mouth resuscitation was more effective than the then-standard chest pressure/arm lift method of ventilation. Shortly afterward, Safar and colleagues incorporated the work of others on external cardiac compression and formed the foundation of CPR and basic life support as we know it today.

He was just getting started. When Safar joined Pitt's School of Medicine in 1961, he established the Department of Anesthesiology and the first multidisciplinary postgraduate training program in critical care medicine, attracting faculty like Ake Grenvik who would go on to lead the program. As the department grew, Safar spawned the first programs of their kind in resuscitation, emergency medical services, respiratory therapy, and intensive care. In his "spare time," Safar helped develop modern first aid and the first American Heart Association CPR standards, manuals, and

instruction courses.

Safar uses words like "superb" and "dedicated" when he talks about his peers and "co-leaders" over the years. For many of these historic endeavors, he notes, he turned implementation over to trusted colleagues.

It was Safar's 60th birthday and a grand affair—black tie, dinner, dancing. Safar was on the dance floor when a young woman approached him with a seductive bump and grind more appropriate for a burlesque stage. As others looked away, turned beat red, or grinned nervously, Safar remained calm—even as the woman began peeling off her dress. Once she was down to her bra and panties, he stepped in and offered his arm, asking if he could have this dance.

The stripper, "was some wag's idea of a joke," says Edison Montgomery, who has held numerous administrative posts at Pitt. Safar handled it all with a signature grace, Montgomery reports: "I've never seen him flustered or outwardly angry. He's forceful yet always extremely gentle.

"Although I admire his brilliance, as an administrator I wouldn't want too many people like him. He would go to a meeting, listen to the objections about a proposed project, and then quietly depart and do what he wanted. And usually, what he did was perfectly wonderful." Like the Hill District venture.

First some background: Safar came to the United States in 1949 to perform a surgical fellowship at Yale. He left surgery for anesthesiology training at the University of Pennsylvania. Simply put, he believed that surgery would not advance without better life support systems. Beginning in the '50s in Baltimore, and throughout his career, Safar emphasized the need to train lay persons in first aid and other life-saving techniques, since the man on the street is often the first on the scene in life-threatening emergencies. He also believed that a cadre of specially trained nonphysicians was essential to building the extensive out-of-hospital emergency care system he knew could save the many who were dying before they could reach the ER. Tired of waiting for the "establishment" to come around, Safar set out to do it himself.

"When I first started at Pitt, I went to see my doctor and told him I was working for Dr. Safar," says Fran Mistrick, Safar's secretary for 19 years. "He said, 'Oh, he's the guy who wanted an ambulance in every driveway.'"

Not really. What Safar wanted was an emergency medical system that actually saved lives

He proceeded to show how one human could breathe life into another.

instead of the nearly nationwide taxi-like service provided mostly by fire departments and police.

“You had a better chance of surviving a gunshot wound in Vietnam than you did a heart attack out on the streets,” says Mitchell Brown, who joined Safar in his efforts.

When the African-American community came to the medical center for advice on buying an ambulance to service the Hill District, Safar pounced. He would help provide one of Pittsburgh’s poorest neighborhoods with the best emergency service in the city, staffed by trained laypersons from within the community.

The result was the Freedom House Enterprises Ambulance Service. Brown joined the ambulance service in 1969 and, as a former paramedic in the Air Force, was one of the few recruits with a medical background. “Peter saw an opportunity to take individuals untainted with preconceptions about emergency care, people who would do things his way,” he says.

After 300 hours of instruction and nine months of physician-supervised field training, Freedom House paramedics, in ambulances equipped to Safar’s design specifications, pro-

ceeded to realize Safar’s dream. Ironically, the Freedom House service eventually disbanded due to lack of funding and “politics,” an ignominious fate for those who helped establish national standards for the complex and extremely effective emergency medical system that we take for granted today.

Like a spark plug, Safar fires off ideas and beliefs that would get even the most sluggish mind churning. Yet a memory of a young girl has the power to make him pause and reflect. He closes his eyes before recounting a tragedy that brought, if possible, an even greater commitment to his work.

He was out of town with his wife and partner, Eva, when he received the call. The Safars’ daughter and eldest child, Elizabeth, was in trouble. Plagued throughout her young life with severe asthma, the 11-year-old had suffered a major attack. Rushing to the airport, Safar knew that time was of the essence.

But Elizabeth’s heart stopped before he could get to her.

“I got back in time to get her heart started, yet her brain was lost,” says Safar. “She was a brave girl and would have been a remarkable woman. Elizabeth has remained like an angel figure in our family.”

After Elizabeth’s death in 1966, Safar redirected his energies toward brain resuscitation. Over the next decade he would co-initiate the Society of Critical Care Medicine and, in 1979, retire as chairman of anesthesiology at Pitt to create the International Resuscitation Research Center (which today is known as the Safar Center for Resuscitation Research and is headed by Patrick Kochanek). Focusing initially on pharmacological cerebral resuscitation strategies, Safar worked tenaciously toward an effective method for rescuing people from prolonged cardiac arrest. He initiated the first animal outcome models and controlled randomized clinical trials of cardiopulmonary-cerebral resuscitation (CPCR). But the drugs proved to have limited value. Safar wasn’t deterred.

As far back as the early ’60s, Safar intuitively believed that hypothermia, more specifically, cooling of the brain after cardiac arrest, would reduce brain dam-

age. Not uncharacteristically, his theory was iconoclastic, going against the standard practice of warming shock patients. Following up on hypothermia studies he had set aside for two decades, Safar and his research fellows revisited them in earnest the 1980s and ’90s. Safar’s hunch was correct: His team demonstrated in animal models that mild hypothermia—about 90 degrees Fahrenheit, a level of cooling that is “simple and safe,” according to Safar—when applied after cardiac arrest or during the “golden hour” of shock, can significantly improve outcome.

Today, as usual, Safar has his naysayers. But he remains undeterred. He says the data support his theories about hypothermia and the technique will be a major advance in life support.

“CPCR has its limitations,” he says. “Sometimes you cannot ‘restart’ a person rapidly because something needs to be fixed first.”

His solution is to place trauma victims in a state of profound hypothermic suspended animation within the critical five minutes after heart arrest. He and Pitt’s Samuel Tisherman, coprincipal investigator, have documented that this approach can lead to complete recovery of animals after one hour of death. The trick, Safar says, lies in shutting down destructive chemical reactions to prevent cell damage during clinical death. Safar’s current studies include research on “preserving” the most vulnerable organs, such as the heart and brain by, for example, “flushing” them with a hypothermic-pharmacological agent. He admits, it sounds like science fiction; but the fantastic is within our reach, he assures.

Although Safar may have escaped the front lines of World War II, he has fought many battles . . . and on several fronts. A member of Physicians for Social Responsibility and the International Physicians for the Prevention of Nuclear War, he has actively campaigned for world peace.

But a monumental struggle still rages for Safar; it is against what he calls the “arbitrary mischances of nature.” With his associate Nancy Caroline, Safar once wrote: “Medicine represents an imposition of human values on a random universe, an assertion that compassion, reason and decency constitute a higher ethic than chance.”

Sure, death always wins out in the end. But if Safar has his way, it will have to wrestle with him first. ■

FOR MORE INFORMATION:
<http://www.safar.pitt.edu>

LEFT: Mouth-to-mouth ventilation on Felix Steichen, one of Safar’s first volunteers for resuscitation research, 1957



MIDDLE: “Nine Ages of Man,” in 1984 was donated to the school in honor of Safar by Peter Winter, his successor as chair of anesthesiology and critical care medicine
BELOW: Freedom House Enterprises Ambulance Service staff, 1975



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